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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,804	12/11/2003	Tae-Hec Cho	P-0622	5887
34610 7590 08/20/2007 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200			EXAMINER ALEJANDRO, RAYMOND	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 08/20/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/732,804

Applicant(s)

CHO ET AL.

Examiner

Raymond Alejandro

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,34-37 and 39-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,34-37 and 39-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

This office action is responsive to the amendment filed 07/20/07. The applicant has overcome the objections and the 35 USC 102 rejections. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments and remarks. However, the present claims are finally rejected over art newly discovered references as set forth hereinbelow and for the reasons of record:

### ***Claim Disposition***

1. Claims 38 and 44-56 were cancelled.

### ***Oath/Declaration***

2. The substitute declaration is acceptable.

### ***Drawings***

3. The drawings were received on 07/20/07. These drawings are acceptable.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-2, 35-37 and 41-43 are rejected under 35 U.S.C. 103(a) as obvious over Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Meibuhr 3802922.

The present invention is to an electrode wherein the disclosed inventive concept comprises the specific combination of the electrode catalyst and the catalyst holding body.

With respect to claim 1:

The AAPA makes known an electrode structure including a foam body 23 made of Ni in which mixture of electrode catalyst particles 21 made of metal halide (MH), and polytetrafluoroethylene 22 is infiltrated, and a mesh 24 made of Ni enclosing the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

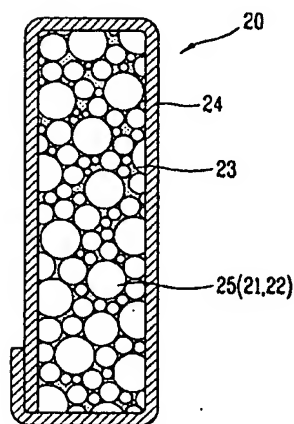
The AAPA discloses in detail, a granule type electrode catalyst 21 and PTFE 22 mixed to a mixture 25 which is infiltrated in the foam body 23 to fill the void parts of the foam body 23; wherein the foam body 23 filled with the mixture 25 is enclosed by the mesh 24 which maintains the shape of the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

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*In this case, it is contended that either or both the foam body 23 and the mesh 24 act(s) as the claimed catalyst holding body; yet further, infiltration of the electrode catalyst granule-PTFE mixture in the foam body 23 encompasses certain degree of entanglement or wrapping or twisting. Note that the term "entangle" only means to wrap or twist together (Merriam-Webster's Collegiate Dictionary 10<sup>th</sup> Edition) but does not suggest any specific material and/or structure.*

**Figure 2** below illustrates the conventional electrode structure disclosed by the applicant (See FIGURE 2).

FIG. 2  
CONVENTIONAL ART



**Examiner's note:** additionally, it is noted that the instant claims are being construed as product-by-process claims (i.e. being entangled has not been given patentable weight) and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. In that, it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art. *In re Thorpe* 777 F.2d 695, 698, 227 USPQ 964,966 (Fed Cir. 1985)

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*and MPEP 2113. As a result, the process steps of a product-by-process claim do not impart any significant property or structure to the claimed end product. And, if there is any difference, the difference would have been minor and obvious. Therefore, the present claims are unpatentable over a reference that satisfies the claimed compositional or physical or property or structural limitations, and/or a reference that discloses a product made by a process that reasonably substantially comprises every limitation of the claimed process.*

With respect to claim 2:

The AAPA discloses a granule type electrode catalyst 21 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

With respect to claims 36-37:

The AAPA uses electrode catalyst particles 21 made of metal halide (MH) (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*). It is noted that a metal halide is a hydrogen storage alloy.

With respect to claims 35 and 41:

The AAPA makes known an electrode structure including a foam body 23 made of Ni and a mesh 24 made of Ni enclosing the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*). In this case, it is contended that either or both the foam body 23 and the mesh 24 act(s) as the claimed catalyst holding body. Moreover, since the foam body 23 and the enclosing mesh are made of Ni, it is further contended that they represent a Ni-material contacting the electrode catalyst, thereby they serve as the claimed Ni layer.

With respect to claims 42-43:

The AAPA uses polytetrafluoroethylene 22 to make the electrode (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

The AAPA discloses an electrode as described above. However, the AAPA does not expressly disclose the specific catalyst holding body being made of metal fibers.

In 1974, Meibuhr discloses fuel cell electrodes (ABSTRACT) wherein examples of typical catalyst support for gaseous reactants include felts of sintered metal fibers, reticulated metal foam, wire meshes, as are known to those skilled in the art (COL 1, lines 24-29).

With these teachings, it would have been obvious to a person possessing a level of ordinary skill in the field of the invention to use the specific catalyst holding body being made of metal fibers of Meibuhr in the electrode of the AAPA as Meibuhr discloses that metal fibers are typical examples of a material used as a catalyst support; and that metal fibers assist in retarding the degradation of the electrode catalytic activity, thereby extending the useful life of fuel cell electrodes.

7. Claims 1-2, 35-37 and 41-43 are rejected under 35 U.S.C. 103(a) as obvious over Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Kraft 3485595.

The present invention is to an electrode wherein the disclosed inventive concept comprises the specific combination of the electrode catalyst and the catalyst holding body.

With respect to claim 1:

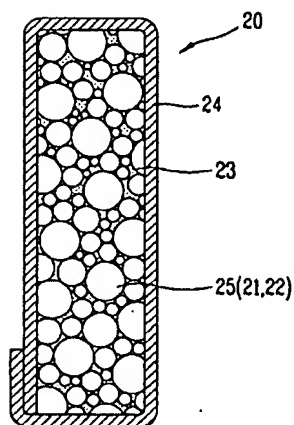
The AAPA makes known an electrode structure including a foam body 23 made of Ni in which mixture of electrode catalyst particles 21 made of metal halide (MH), and polytetrafluoroethylene 22 is infiltrated, and a mesh 24 made of Ni enclosing the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

The AAPA discloses in detail, a granule type electrode catalyst 21 and PTFE 22 mixed to a mixture 25 which is infiltrated in the foam body 23 to fill the void parts of the foam body 23; wherein the foam body 23 filled with the mixture 25 is enclosed by the mesh 24 which maintains the shape of the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*). *In this case, it is contended that either or both the foam body 23 and the mesh 24 act(s) as the claimed catalyst holding body; yet further, infiltration of the electrode catalyst granule-PTFE mixture in the foam body 23 encompasses certain degree of entanglement or wrapping or twisting. Note that the term "entangle" only means to wrap or twist together (Merriam-Webster's Collegiate Dictionary 10<sup>th</sup> Edition) but does not suggest any specific material and/or structure.*

**Figure 2** below illustrates the conventional electrode structure disclosed by the applicant (See FIGURE 2).



FIG. 2  
CONVENTIONAL ART



**Examiner's note:** additionally, it is noted that the instant claims are being construed as product-by-process claims (i.e. being entangled has not been given patentable weight) and that the product itself does not depend on the process of making it. Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. In that, it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art. *In re Thorpe* 777 F.2d 695, 698, 227 USPQ 964,966 (Fed Cir. 1985) and MPEP 2113. As a result, the process steps of a product-by-process claim do not impart any significant property or structure to the claimed end product. And, if there is any difference, the difference would have been minor and obvious. Therefore, the present claims are unpatentable over a reference that satisfies the claimed compositional or physical or property or structural limitations, and/or a reference that discloses a product made by a process that reasonably substantially comprises every limitation of the claimed process.

With respect to claim 2:

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The AAPA discloses a granule type electrode catalyst 21 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

With respect to claims 36-37:

The AAPA uses electrode catalyst particles 21 made of metal halide (MH) (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*). *It is noted that a metal halide is a hydrogen storage alloy.*

With respect to claims 35 and 41:

The AAPA makes known an electrode structure including a foam body 23 made of Ni and a mesh 24 made of Ni enclosing the foam body 23 (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*). *In this case, it is contended that either or both the foam body 23 and the mesh 24 act(s) as the claimed catalyst holding body. Moreover, since the foam body 23 and the enclosing mesh are made of Ni, it is further contended that they represent a Ni-material contacting the electrode catalyst, thereby they serve as the claimed Ni layer.*

With respect to claims 42-43:

The AAPA uses polytetrafluoroethylene 22 to make the electrode (*See applicant's specification on page 3, lines 10-25/ FIGURE 2*).

The AAPA discloses an electrode as described above. However, the AAPA does not expressly disclose the specific catalyst holding body being made of metal fibers.

In 1969, Kraft discloses metal fiber bodies (TITLE/EXAMPLES 1-5/COL 1, lines 15-20) or a body of intertwined metal fibers (CLAIM 1/EXAMPLES 1-5/ COL 1, lines 15-20) suitable for use as catalyst support in fuel cell electrodes for their extremely good thermal conductivity,

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thus the temperature in the catalyst bed need not be unnecessarily high, thereby the life of the whole electrode unit is essentially increased (COL 4, lines 5-15).

With these teachings, it would have been obvious to a person possessing a level of ordinary skill in the field of the invention to use the specific catalyst holding body being made of metal fibers of Kraft in the electrode of the AAPA as Kraft discloses that metal fibers as a catalyst support provides extremely good thermal conductivity, thus the temperature in the catalyst bed need not be unnecessarily high, thereby the life of the whole electrode unit is essentially increased.

8. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as obvious over Yoshida et al 2003/0091891 in view of Meibuhr 3802922.

Yoshida et al discloses catalyst composition for a cell comprising a catalyst-bearing conductive powder particles and fibrous carbon (ABSTRACT). Specifically, Yoshida et al discloses catalyst particles and a fiber filament being entangled therewith (P0069).

**Examiner's note:** "Arguments that the alleged anticipatory prior art is nonanalogous art' or teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). See also *State Contracting & Eng 'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1068, 68 USPQ2d 1481, 1488 (Fed. Cir.2003). See MPEP 2131.05 [R-5] *Nonanalogous or Disparaging Prior Art*.

Yoshida et al discloses an electrode as described above. However, Yoshida et al does not expressly disclose the specific catalyst holding body being made of metal fibers.

In 1974, Meibuhr discloses fuel cell electrodes (ABSTRACT) wherein examples of typical catalyst support for gaseous reactants include felts of sintered metal fibers, reticulated metal foam, wire meshes, as are known to those skilled in the art (COL 1, lines 24-29).

With these teachings, it would have been obvious to a person possessing a level of ordinary skill in the field of the invention to use the specific catalyst holding body being made of metal fibers of Meibuhr in the electrode of Yoshida et al as Meibuhr discloses that metal fibers are typical examples of a material used as a catalyst support; and that metal fibers assist in retarding the degradation of the electrode catalytic activity, thereby extending the useful life of fuel cell electrodes.

9. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as obvious over Yoshida et al 2003/0091891 in view of Kraft 3485595.

Yoshida et al discloses catalyst composition for a cell comprising a catalyst-bearing conductive powder particles and fibrous carbon (ABSTRACT). Specifically, Yoshida et al discloses catalyst particles and a fiber filament being entangled therewith (P0069).

**Examiner's note:** "Arguments that the alleged anticipatory prior art is nonanalogous art' or teaches away from the invention' or is not recognized as solving the problem solved by the claimed invention, [are] not germane' to a rejection under section 102." *Twin Disc, Inc. v. United States*, 231 USPQ 417, 424 (Cl. Ct. 1986) (quoting *In re Self*, 671 F.2d 1344, 213 USPQ 1, 7 (CCPA 1982)). See also *State Contracting & Eng 'g Corp. v. Condotte America, Inc.*, 346

*F.3d 1057, 1068, 68 USPQ2d 1481, 1488 (Fed. Cir.2003). See MPEP 2131.05 [R-5]*

*Nonanalogous or Disparaging Prior Art.*

Yoshida et al discloses an electrode as described above. However, Yoshida et al does not expressly disclose the specific catalyst holding body being made of metal fibers.

In 1969, Kraft discloses metal fiber bodies (TITLE/EXAMPLES 1-5/COL 1, lines 15-20) or a body of intertwined metal fibers (CLAIM 1/EXAMPLES 1-5/ COL 1, lines 15-20) suitable for use as catalyst support in fuel cell electrodes for their extremely good thermal conductivity, thus the temperature in the catalyst bed need not be unnecessarily high, thereby the life of the whole electrode unit is essentially increased (COL 4, lines 5-15).

With these teachings, it would have been obvious to a person possessing a level of ordinary skill in the field of the invention to use the specific catalyst holding body being made of metal fibers of Kraft in the electrode of Yoshida et al as Kraft discloses that metal fibers as a catalyst support provides extremely good thermal conductivity, thus the temperature in the catalyst bed need not be unnecessarily high, thereby the life of the whole electrode unit is essentially increased.

10. Claims 3 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Meibuhr 3802922; and/or b) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Kraft 3485595; and/or c) Yoshida et al

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2003/0091891 in view of Meibuhr 3802922; and/or d) Yoshida et al 2003/0091891 in view of Kraft 3485595 as applied to claim 1 above, and further in view of Blum et al 2003/0059665.

All of the preceding references are applied, argued and incorporated herein for the reasons discussed above. However, the preceding references do not expressly disclose the specific electrode catalyst in the form of a filament or formed of fine fibers.

Blum et al disclose an electrode arrangement for an electrochemical cell comprising a fiber or filament-like catalytic material (P0041-0042).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to use the specific the specific electrode catalyst in the form of a filament or formed of fine fibers of Blum et al in the electrode of the AAPA, Meibuhr, Kraft and/or Yoshida et al, Meibuhr, Kraft as Blum et al teach that such an electrode catalyst (i.e. filament/fine fibers) provides a mechanically stable reacting area that can be subjected to high electrical loads. *In this instance, the teachings of Blum et al are found to be pertinent to both the AAPA and the field of applicant's endeavor as Blum et al address the same problem of providing suitable electrode structures comprising a catalyst-catalyst holding arrangement.*

11. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Meibuhr 3802922; and/or b) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is*

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*identical to applicant's specification*) in view of Kraft 3485595; and/or c) Yoshida et al 2003/0091891 in view of Meibuhr 3802922; and/or d) Yoshida et al 2003/0091891 in view of Kraft 3485595 as applied to claim 38 above, and further in view of Schlomer et al 3811976

All of the preceding references are applied, argued and incorporated herein for the reasons discussed above. However, the preceding references do not expressly disclose the specific fiber length.

Schlomer et al disclose metal fiber felts used with advantage particularly in electrodes and in catalyst units because of their large surface coupled with good strength, flexibility and very uniform distribution (COL 1, lines 39-46 & lines 25-27). Schlomer et al's metal fiber has an average length of 5 mm (5000  $\mu$ m) (COL 5, lines 40-45/ EXAMPLE).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to use the specific fiber length of the metal fiber of Schlomer et al in the electrode of the AAPA, Meibuhr, Kraft and/or Yoshida et al, Meibuhr, Kraft as Schlomer et al teach that the specified metal fiber can be used with advantage particularly in electrodes and in catalyst units because of their large surface coupled with good strength, flexibility and very uniform distribution (COL 1, lines 39-46 & lines 25-27). *In this case, Schlomer et al is fully relevant to both the AAPA and the field of applicant's endeavor because they discuss that their specific metal fiber is particularly advantageous in electrodes and in catalyst units, thereby they are concerned with exactly the same technical problem faced by both the AAPA and applicant.*

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12. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Meibuhr 3802922; and/or b) Applicant Admission of Prior Art (heretofore the AAPA) (*US Patent Application Publication 2005/0130026 is referenced herein as its disclosure is identical to applicant's specification*) in view of Kraft 3485595; and/or c) Yoshida et al 2003/0091891 in view of Meibuhr 3802922; and/or d) Yoshida et al 2003/0091891 in view of Kraft 3485595 as applied to claim 38 above, and further in view of Amamoto 2001/0003627

All of the preceding references are applied, argued and incorporated herein for the reasons discussed above. However, the preceding references do not expressly disclose the specific fiber diameter.

Amamoto discloses metal or metal alloy fibers (ABSTRACT) having a diameter of about 5-30  $\mu\text{m}$  used in various fields including as a catalyst carrier (P0005-0006, 0021, Examples 1-3).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to use the specific fiber diameter of the metal fiber of Amamoto in the electrode of the AAPA, Meibuhr, Kraft and/or Yoshida et al, Meibuhr, Kraft as Amamoto teaches that the specified metal fibers can be used as a catalyst carrier because it has a corrosion resistance higher than other catalyst carriers and has a larger specific surface area which is an important factor in the catalyst field due to the requirement of a surface area participant in the reaction.



*Response to Arguments*

13. Applicant's arguments with respect to the foregoing claims have been considered but are moot in view of the new ground(s) of rejection.

*Conclusion*

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro  
Primary Examiner  
Art Unit 1745



RAYMOND ALEJANDRO  
PRIMARY EXAMINER